CLAIMS

What is claimed is:

1. A process for fabricating a multidirectional fibrous reinforcement designed to be a porous preform for producing a part made of a composite material, said process comprising the steps of:

depositing at least one reinforcing thread in at least two successive layers on a support surface;

providing a binder in association with said reinforcing thread so as to adhere said reinforcing thread to said support surface wherein said binder also provides a bond between said successive layers; and

pressing said reinforcing thread against the support surface during said depositing step in a manner that exerts a pressure substantially perpendicular to said support surface at the point where the thread is deposited.

2. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said reinforcing thread is advanced as the reinforcing thread is deposited so as not to cause any tension in said reinforcing thread and so as to deposit the thread without tension.

3. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said step of providing said binder in association with said reinforcing thread comprises the step of activating said binder as the reinforcing thread is deposited.

4. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said step of providing said binder in association with said reinforcing thread comprises depositing said binder on said support surface ahead of the reinforcing thread while the reinforcing thread is being deposited.

5. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said step of depositing reinforcing thread is accomplished using a deposit finger

having a presser head that is shaped to exert said pressure on the reinforcing thread and a thread guide groove in said deposit finger for leading said reinforcing thread to the presser head.

6. A process for fabricating a multidirectional fibrous reinforcement according to claim **5** wherein said pressure is exerted perpendicular to the surface of the presser head on the deposit finger and wherein the surface of the presser head is kept substantially tangent to the support surface while the reinforcing thread is being deposited thereon.

7. A process for fabricating a multidirectional fibrous reinforcement according to claim **5** wherein said step of depositing reinforcing thread comprises simultaneously depositing several reinforcing threads on said support surface in parallel deposit trajectories.

8. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said binder comprises a thermoplastic powder and wherein the area where the reinforcing thread is to be deposited is heated.

9. A process for fabricating a multidirectional fibrous reinforcement according to claim **8** wherein said thermoplastic powder is co-deposited onto said support surface with said reinforcing thread.

10. A process for fabricating a multidirectional fibrous reinforcement according to claim **9** wherein said reinforcing thread is covered at least partially with said thermoplastic powder.

11. A process for fabricating a multidirectional fibrous reinforcement according to claim **8** wherein said support surface is covered at least partially with a thermoplastic powder prior to deposition of said reinforcing thread thereon.

12. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said binder comprises a hot-melt resin that is deposited on said support surface

when said reinforcing thread is being deposited thereon and wherein said hot-melt resin is deposited ahead of the deposit of the reinforcing thread on said support surface.

13. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said binder comprises a thermoplastic thread wrapped around the reinforcing thread to form a binder/reinforcement thread and wherein said binder/reinforcement thread is heated at the point where said binder/reinforcement thread is deposited.

14. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said binder comprises a pulverizable solution or emulsion of at least one adhesive resin.

15. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said binder is bound to the reinforcing thread so as to form a hybrid reinforcing thread comprising said binder and said reinforcing thread.

16. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said reinforcing thread is deposited in discontinuing segments.

17. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said support surface comprises an area having a concave or convex shape and wherein said reinforcing thread is deposited at least in said area of the support surface that has said concave or convex shape.

18. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein said pressure exerted against said reinforcing thread is between 0.01 and 30 bar.

19. A process for fabricating a multidirectional fibrous reinforcement according to claim **1** wherein the location where the reinforcing thread is deposited on said support surface is heated to a temperature of between 50 and 450°C.

20. A porous preform comprising several layers of reinforcing threads arranged in at least two directions and bound to one another by a binder wherein said porous perform is fabricated in accordance with the process set forth in claim **1**.

21. A porous preform according to claim **20**, wherein said reinforcing threads are without tension and not subject to any pre-constraint.

22. A system for fabricating a multidirectional fibrous reinforcement, said system comprising:

a support comprising a surface that has the form of the fibrous reinforcement to be fabricated;

means for providing at least one reinforcing thread,

at least one deposit head which includes a presser surface for pressing the reinforcing thread against the surface of said support;

means for guiding the reinforcing thread to the presser surface of said deposit head;

means for moving said deposit head in relation to the surface of said support such that the reinforcing thread is pressed against the surface of said support and wherein said presser surface is maintained substantially tangent to the surface of said support so that the pressure exerted by said deposit head is substantially perpendicular to the surface of said support.

23. A system according to claim **22** that comprises a deposit finger that includes said deposit head and wherein said means for guiding the reinforcing thread to the presser surface comprises a thread guide groove located in said deposit finger.

24. A system according to claim **22** wherein said means for guiding the reinforcing thread to the presser surface comprises means for feeding the reinforcing thread to said presser surface so as not to cause any tension in the reinforcing thread.

25. A system according to claim **22** that comprises means for applying a binder to said reinforcing thread.

26. A system according to claims **25** that comprises means for activating said binder.

27. A system according to claim **25** wherein said means for applying said binder in to said reinforcing thread comprises means for depositing said binder on said support surface ahead of the reinforcing thread while the reinforcing thread is being deposited.

28. A system according to claim **22** that includes at least two deposit heads that are oriented so as to provide simultaneous deposit of at least two reinforcing threads on said support surface in parallel deposit trajectories.

29. A system according to claim **25** wherein said binder comprises a thermoplastic powder and wherein said means for activating said binder comprises means for heating the area where the reinforcing thread is deposited.

30. A system according to claim **29** wherein said means for applying said binder comprises means for co-depositing said thermoplastic powder and said reinforcing thread onto said support surface.

31. A system according to claim **25** wherein said means for applying said binder comprises means for covering said reinforcing thread at least partially with said thermoplastic powder prior to depositing said reinforcing thread on the surface of said support.

32. A system according to claim **25** wherein said means for applying said binder comprises means for covering the surface of said support at least partially with a thermoplastic powder prior to deposition of said reinforcing thread thereon.

33. A system according to claim **25** wherein said means for applying said binder comprises means for applying a hot-melt resin on said support surface when said reinforcing thread is being deposited thereon wherein said hot-melt resin is deposited ahead of the deposit of the reinforcing thread on said support surface.

34. A system according to claim **22** wherein said reinforcing thread comprises a thermoplastic thread wrapped around the reinforcing thread to form a binder/reinforcement thread and wherein means for activating said binder/reinforcement thread comprises means for heating the point where said binder/reinforcement thread is deposited.

35. A system according to claim **25** wherein said binder comprises a pulverizable solution or emulsion of at least one adhesive resin.

36. A system according to claim **22** wherein means are provided for depositing said reinforcing thread on the surface of said support in discontinuous segments.

37. A system according to claim **22** wherein said support surface comprises an area having a concave or convex shape.

38. A system according to claim **22** wherein said means for moving said deposit head comprises means for exerting a pressure against said reinforcing thread that is between 0.01 and 30 bar.

39. A system according to claim **26** wherein said means for activating said binder comprises means for heating the location where the reinforcing thread is deposited on said support surface to a temperature of between 50 and 450°C.